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CERAMIC ABSTRACTS

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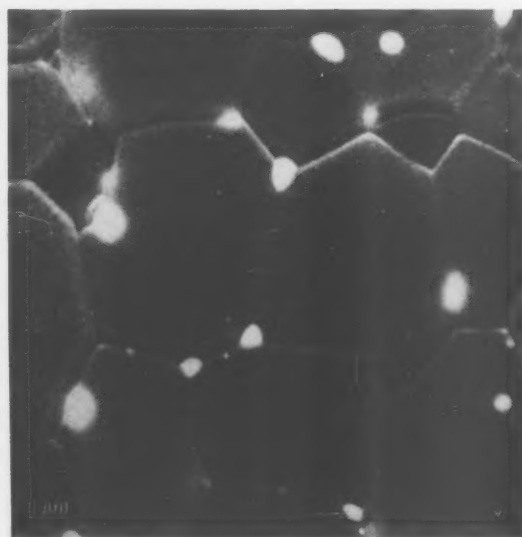
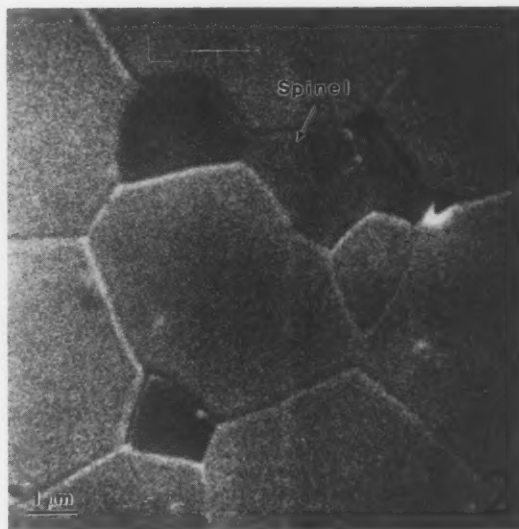
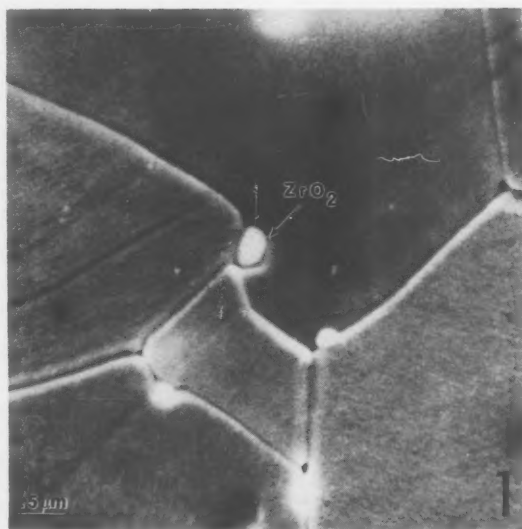
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SECOND PHASES IN SINGLY DOPED (Mg OR Zr) AND CODOPED (Mg + Zr) Al_2O_3



The second phase distributions in sintered Al_2O_3 (1600°C, 20 hrs) doped with 1 atom % Zr, 1 atom % Mg and 0.5 atom % Zr + 0.5 atom % Mg have been studied.

Figure 1: Zirconia doping alone leads to the formation of a fine dispersion of both intergranular and intragranular ZrO_2 precipitates.

Figure 2: Magnesia doping leads to the formation of a second phase comprised of small spinel (MgAl_2O_4) grains.

Figure 3: Codoping produces a microstructure containing a mixture of both ZrO_2 precipitates and spinel grains.

These observations show that there is no substantial enhancement (at the percent level) of solubility in codoped (Mg + Zr) samples.

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